

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

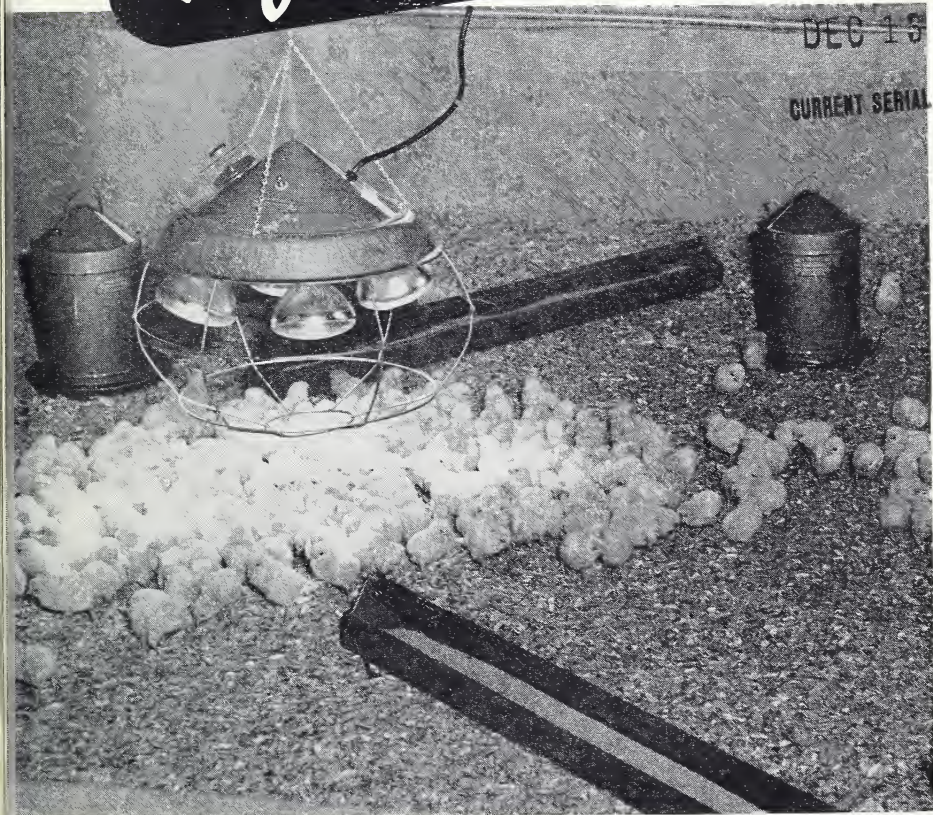
99842
op. 2

Brooding Chicks With Infrared Lamps

NATIONAL AGRICULTURAL LIBRARY

DEC 15 1965

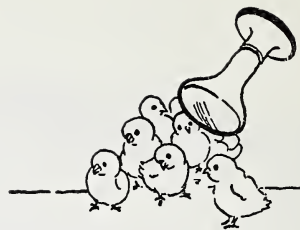
CURRENT SERIAL REVIEW



Leaflet No. 397

U. S. DEPARTMENT OF AGRICULTURE

Brooding Chicks With *Infrared Lamps*



Poultry producers find that infrared lamps provide a convenient heating system for rearing chicks.

With infrared brooders there is no fuel to carry, no ashes to remove, no burners to clean. Brooders are light in weight, and are easy to set up, move, and store. You can see the chicks without lifting a cover.

The price of readymade infrared brooders ranges from \$3 to \$40, depending on the number of lamps, type of brooder, and whether they have thermostats. You can build an infrared brooder from plans available from your State agricultural extension service. Ask your county agent.

Radiation from an infrared lamp warms the objects to which it is directed. The air is warmed only a small amount indirectly from the litter and objects that have been warmed or radiated directly by the lamps. This eliminates some of the waste of heating those parts of a building that are not used for brooding.

The laborsaving and low initial costs of infrared brooders appeal especially to farmers who raise 100 to 500 chicks per brood and are usually busy with other work at brooding time. Some use them to supplement another brooding method or in combination with an additional heating system. They heat their brooder houses to 50°-60° F. and use infrared lamps to supply the additional heat needed.

Material and Equipment

Whether you buy or build an infrared lamp brooder, the following are points to consider:

- Make the brooder house draft free. Insulating the house will reduce drafts, cut down on the amount of electricity used, and aid in ventilation control.
- Check with your power supplier or an electrician if you're not sure the wiring to the brooder house is safe and adequate for the number of lamps you will use.
- Buy enough lamps to furnish sufficient heat at the lowest temperatures expected. Infrared lamps come in 125-, 250-, and 375-watt sizes. The 250-watt size, which costs about \$1.10, is the one most commonly used for poultry brooding. Buy lamps that are equipped with built-in reflectors unless your brooder is designed for the use of lamps without reflectors. Hard glass lamps cost twice as much as ordinary lamps. Guards or shields are good insurance against breakage.
- Use porcelain sockets approved for infrared lamps.
- Support the brooder with a chain or wire, *not* with the cord that carries the electricity.
- Reflectors or guards should be electrically grounded by using type HS or HSJ three-wire cord with the ground wire attached to the metal shield and terminated with grounding-type connectors and outlets. The ground wire must con-



One infrared lamp can be used to brood up to 100 chicks.

tinue back to a driven ground connection at the service entrance box.

The following table shows the maximum number of 250-watt lamps that should be used on common wire type and sizes for brooders and electric circuits:

Maximum number of 250-watt lamps

| Wire size | Flexible heater cord | | Circuit conductors |
|-----------|----------------------|-------|---------------------|
| | HSJ | HS | TW, RW cable or EMT |
| 18----- | 3 | ----- | ----- |
| 16----- | 5 | ----- | ----- |
| 14----- | ----- | 7 | 5 |
| 12----- | ----- | 11 | 7 |
| 10----- | ----- | ----- | 11 |

CAUTION: Never overload a circuit. For example, the load on No. 12 TW, RW, or equal in non-metallic cable or conduit should not exceed seven 250-watt lamps or a total of 1750 watts. To handle more 250-watt lamps or more total wattage, No. 10 or higher circuit conductor wire would be required.

Mount the lamps 12 to 24 inches apart under a baffle when building your own brooder.

Use a thermostat to reduce operating costs.

Keep spare lamps and fuses on hand.

Brooders should have guards to prevent lamps from coming in accidental contact with the litter or other combustible material.

How To Use the Lamps

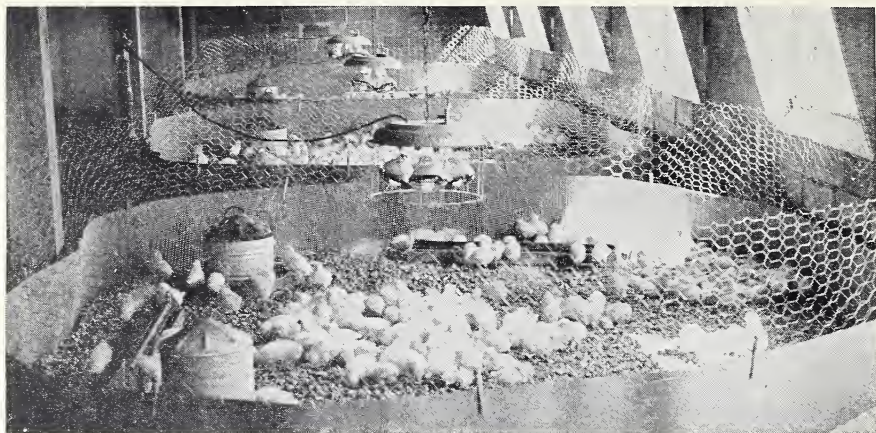
The following table shows the approximate number of chicks that can be brooded with a 250-watt lamp at various room temperatures:

| Room temperature | Number of day-old chicks |
|------------------|--------------------------|
| 85° F. | 110 |
| 75 | 100 |
| 65 | 90 |
| 55 | 80 |
| 45 | 70 |
| 35 | 60 |

A 4- or 6-lamp brooder is usually required for brooding a flock of 300 to 500 chicks.

Suspend the brooder so that no surface of a lamp can get closer than 15 inches to the litter.

Place a nonperforated metal or cardboard chick guard 12 to 18 inches high around the brooder for the first week or 10 days to prevent floor drafts and to confine the chicks to the "comfort zone."



Multiple infrared-lamp units for brooding large number of chicks.

Let the chicks tell you when the temperature is right. They're cold if they crowd under the lamps. Supply more heat by lowering the lamps to not less than 15 inches above the litter, or use more or higher-wattage lamps. (See CAUTION note above.)

If the chicks are too warm, they'll move to the outer limits of the "comfort zone." Turn off some of the lamps; use smaller lamps (two 125-watt lamps heat more floor area than one 250-watt) or raise the brooder to 24 inches above the litter. A thermometer won't help—you are heating the chicks only, not the air.

Ventilate to keep the walls and litter dry and the air fresh. An electric exhaust fan will help do this.

Check lamps regularly to make sure they are screwed firmly into the sockets.

Take immediate steps to protect your chicks when there is a power outage. There's no problem if you have a standby generator of sufficient capacity that has been properly installed. Just put it into operation. But if you have no standby unit, put the chicks back into their shipping boxes and place the boxes in a heated room. If the chicks are too large for the shipping boxes, provide temporary heat with a small stove. You may want to install a mechanical or battery-operated alarm to warn you when the current goes off; they're inexpensive.

* * * *

When you don't need them for poultry brooding, infrared lamps have many other uses around the farm and home. They can be used for brooding pigs, calves, and lambs; for thawing frozen pipes; and for "spot heating" for human comfort.

This leaflet was prepared by
John G. Taylor and J. M. Stanley
Agricultural Engineering Research Division
Agricultural Research Service

Washington, D.C.

Issued December 1955
Slightly revised November 1965

U.S. GOVERNMENT PRINTING OFFICE : 1965

